BEFORE THE FEDERAL COMMUNICATIONS COMMISSION

WASHINGTON, D.C. 20554

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| COMMENT OF FREDERICK L. PILOT | IN THE MATTER OF REPORT ON THE FUTURE OF THE UNIVERSAL SERVICE FUND<br><br>**WC DOCKET NO. 21-476**<br><br>NOTICE OF INQUIRY |

Since the enactment of the 1996 Telecom Act, the United States has fallen far short of the legislation's goal of universal access to advanced telecommunications. Despite fiber optic technology predating the Act by decades, less than four in 10 American homes had access to fiber connections in 2020.[1] Fiber should have reached nearly every doorstep by 2010, leaving the nation at least a decade behind where it should be at the third decade of the 21st century. The overall picture of fiber to the premises (FTTP) deployment is one of fragmentation and incrementalism. The nation is not on a trajectory to ensure timely access to advanced telecommunications benefitting all Americans. A course correction is necessary.

Policymakers now have the benefit of history to assess methods and progress toward the goal of universal access to advanced telecommunications. Having been given a major role by Congress, the Commission is well positioned to reassess past efforts and where they fell short and to recommend new strategies to meet it.

Current policy must be reimagined and simplified. It has grown overly complex and ineffective, baking in incremental and parochial -- versus national -- progress. It must be aligned to a future of exponential bandwidth demand growth, requiring fiber connections for all American homes, businesses and institutions for a digital 21st century. It must support a rapid modernization of legacy copper telephone lines that reach nearly every U.S. household to fiber on a state and regional basis given advanced telecommunications infrastructure crosses state lines and local jurisdictions.

[1] https://www.bbcmag.com/multifamily-broadband/fiber-trends-what-2021-promises-for-the-broadband-industry

Universal advanced telecommunications capability should be defined from the perspective of infrastructure deployment since without it, advanced telecommunications capability is not possible. The Commission should recommend Congress establish an infrastructure standard of FTTP rather than a policy of technological neutrality. Experts generally agree only fiber has the capacity to accommodate future bandwidth demand.[2] The nation cannot continue to rely on metallic legacy telephone and cable TV infrastructure of the 20th century. Nor can it depend on terrestrial and space-based wireless workarounds that will be unable to keep up with growing bandwidth demand due to the physical limitations of radio spectrum.

Technological neutrality cannot provide assurance of universal advanced telecommunications infrastructure as experience with digital subscriber line (DSL) has shown. DSL over legacy telephone copper proved unable to reliably serve customer premises more than two to three miles from central office or field distribution equipment due to its inherent technological limitations and aged copper outside plant. Similarly, wireless technologies are limited since higher frequencies that can reliably deliver large bandwidth suffer from propagation and capacity constraints.

The COVID-19 pandemic and public health mitigation measures illustrated just how vital robust advanced telecommunications service is, turning homes into offices, classrooms and medical clinics and rapidly accelerating a pre-existing trend toward virtualization of knowledge work, education and telemedicine.

Market forces alone can't attain near universal FTTP. Investor-owned providers naturally seek to build FTTP only where it can produce a sufficient return on investment. Where profit incentive is lacking to build fiber, some localities have built fiber networks as publicly owned infrastructure, some serving business premises but not residences.[3] But many if not most struggle with taxpayer resistance to fund them and securing long term bond debt, leading to sluggish progress and fragmented infrastructure deployment. As one expert noted, "even though more and more cities and localities are taking this step, the resulting patchwork of connectivity can only be fashioned into an upgraded whole with the involvement of the federal government."[4]

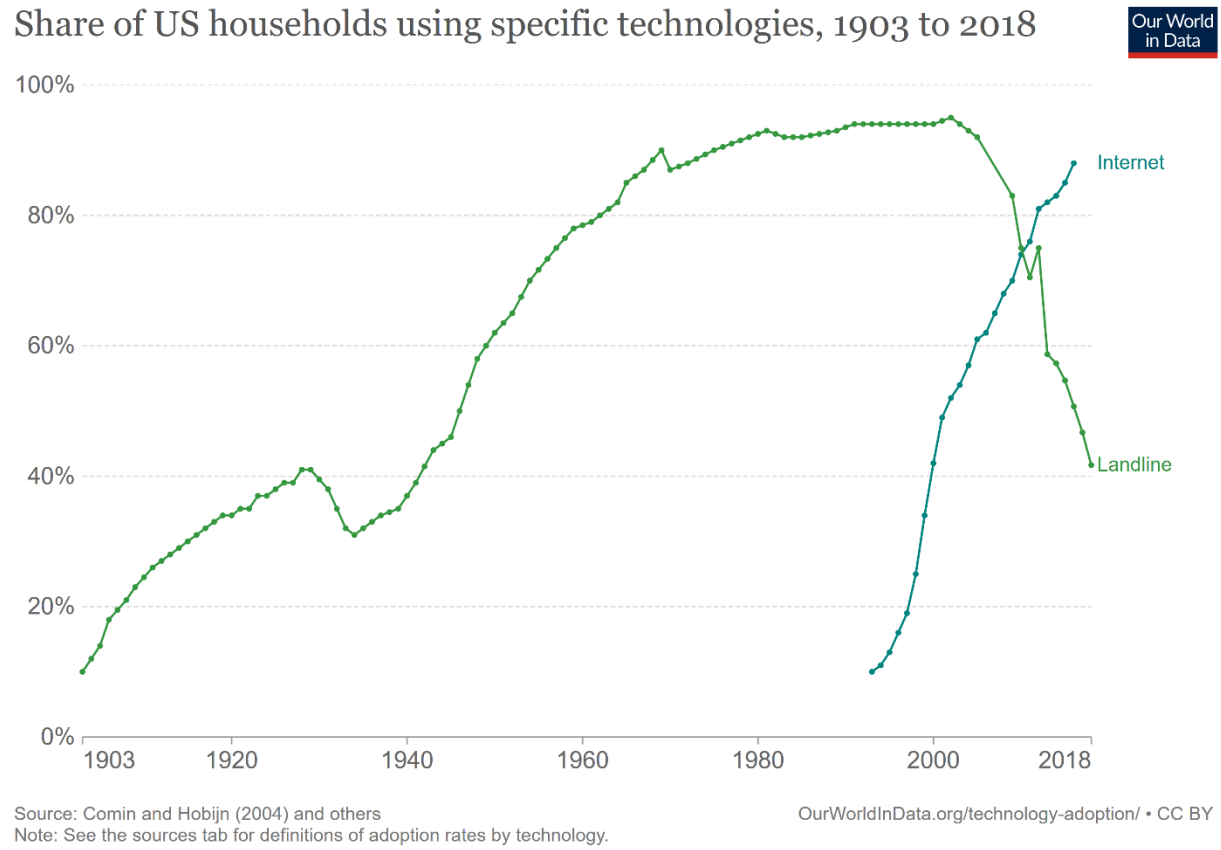
The common carrier regulatory scheme under Title II of the Communications Act of 1934 worked reasonably well for attaining universal voice telephone service. It mandated telephone companies honor all reasonable requests for service with high-cost area subsidization to

[2] *The Case for Fiber to the Home, Today: Why Fiber is a Superior Medium for 21st Century Broadband*. Electronic Frontier Foundation, October 16, 2019. https://www.eff.org/wp/case-fiber-home-today-why-fiber-superior-medium-21st-century-broadband

[3] https://muninetworks.org/content/open-access#current

[4] Susan Crawford, *Fiber: The Coming Tech Revolution—and Why America Might Miss It*. Yale University Press January 8, 2019

support this requirement. Title II allowed for incremental progress toward universal telephone service that meshed well with the comparatively slower adoption of telephone service, an entirely new communications technology in the early 20th century. But this regulatory scheme is poorly matched to the swift rise in demand for advanced telecommunications in the 21st. As the following graph illustrates, the adoption of advanced telecommunications is advancing at a substantially faster pace than 20th century landline voice telephone service given its essential nature to support this wide range of uses.




Source: https://ourworldindata.org/internet

The United States requires a robust advanced telecommunications infrastructure initiative to ensure universal service and to obtain the best and least obsolescence prone infrastructure to deliver it. To achieve the equitable access achieved with landline voice telephone service in the previous century, the Commission should recommend Congress build on and expand the Broadband Equity, Access & Deployment Program (BEAD) of the Infrastructure Investment and Jobs Act (IIJA) that funds advanced telecommunications infrastructure using a federal-state grant funding mechanism similar to Highway Trust Fund. In response to the potential funding for advanced telecommunications infrastructure appropriated by the IIJA, states have formed

authorities to administer federally funded projects including most recently Pennsylvania [5] and California.[6]

As stated previously, the Commission should recommend Congress establish FTTP as a national advanced telecommunications infrastructure standard, replacing the service-level "broadband" throughput eligibility standard for BEAD funding that is prone to rapid obsolescence. This will relieve the Commission of the futile burden of trying to keep pace with growing bandwidth demand. History has shown since the Commission's creation of the National Broadband Map in 2010, the Commission has found it difficult to maintain accurate and current maps of service levels in discrete geographic areas of the country, prompting years of complaints from public officials and elected representatives.

Given the tardy state of advanced telecommunications infrastructure modernization to FTTP, the Commission should recommend Congress undertake an advanced telecommunications infrastructure initiative as a national infrastructure priority. The creation of such a singularly focused initiative would eliminate multiple subsidy programs housed at various federal agencies. Critically, it would remove the Commission from advanced telecommunications infrastructure deployment and allow it to concentrate on its primary role of regulator. The IIJA lays the groundwork for this by making the National Telecommunications and Information Administration the lead federal agency to disburse advanced telecommunications infrastructure grant subsidies to the states. As a condition of receiving these funds, states should be required to utilize them to build universal FTTP infrastructure.

Government ownership of the infrastructure is necessary since commercial players are unable to devote necessary capital investment funds quickly enough to achieve universal fiber delivered advanced telecommunications service. They face competing demands against capital investment dollars from investors seeking consistently high returns and shareholder dividends as well creditor obligations due to heavily leveraged balance sheets.

Since government owned infrastructure does not carry the burdens of taxation and generating profits for investors, it increases the nation's ability to provide affordable connectivity to low income and fixed income households, consistent with the public policy intent of the Commission's new Affordable Connectivity Program. Government owned networks like roads and highways that are open and accessible for various forms of vehicular traffic should similarly be open or "net neutral" as determined by the Commission and other regulators. The Commission should recommend Congress preempt state laws barring public sector entities from owning or operating advanced telecommunications infrastructure.

[5] https://www.pahouse.com/InTheNews/NewsRelease/?id=122180

[6] https://www.goldenstateconnect.org/

As with the Highway Trust Fund, the Universal Service Fund (USF) is confronting a sustainability crisis. Both due to their dependence on taxes based on goods and services undergoing long term declines in consumption – motor vehicle fuels with the Highway Trust Fund and voice telephone calls in the case of the USF. Commissioner Brendan Carr states in this Notice of Inquiry that the USF is in a "death spiral." Mr. Carr proposes its funding mechanism be replaced with a seven percent surcharge on Google's and Facebook's digital advertising revenues to put the USF "on a stable and sustainable funding path."

Rather than trying to sustain the USF, the Commission should recommend Congress abolish it and fund advanced telecommunications infrastructure with federal income tax revenues given the broad role advanced telecommunications plays in enabling taxable economic activity and interstate commerce far above and beyond that of voice telephone service.

> *"Ultimately, last-mile fiber is a public good. It will not pay for itself quickly—we never expected that of the highway system—and should not be expected to. It should be an industrial policy priority for America and the rest of the world. Only fiber will facilitate the exponential growth of innovation and productivity in transportation, energy, health care, manufacturing, education, job training, disability access, augmented/ virtual reality, government services, and public safety that will keep our living standards rising as they have in the past."*[7]

Dated this 31st day of December, 2021

[7] Crawford, *Fiber: The Coming Tech Revolution—and Why America Might Miss It*.